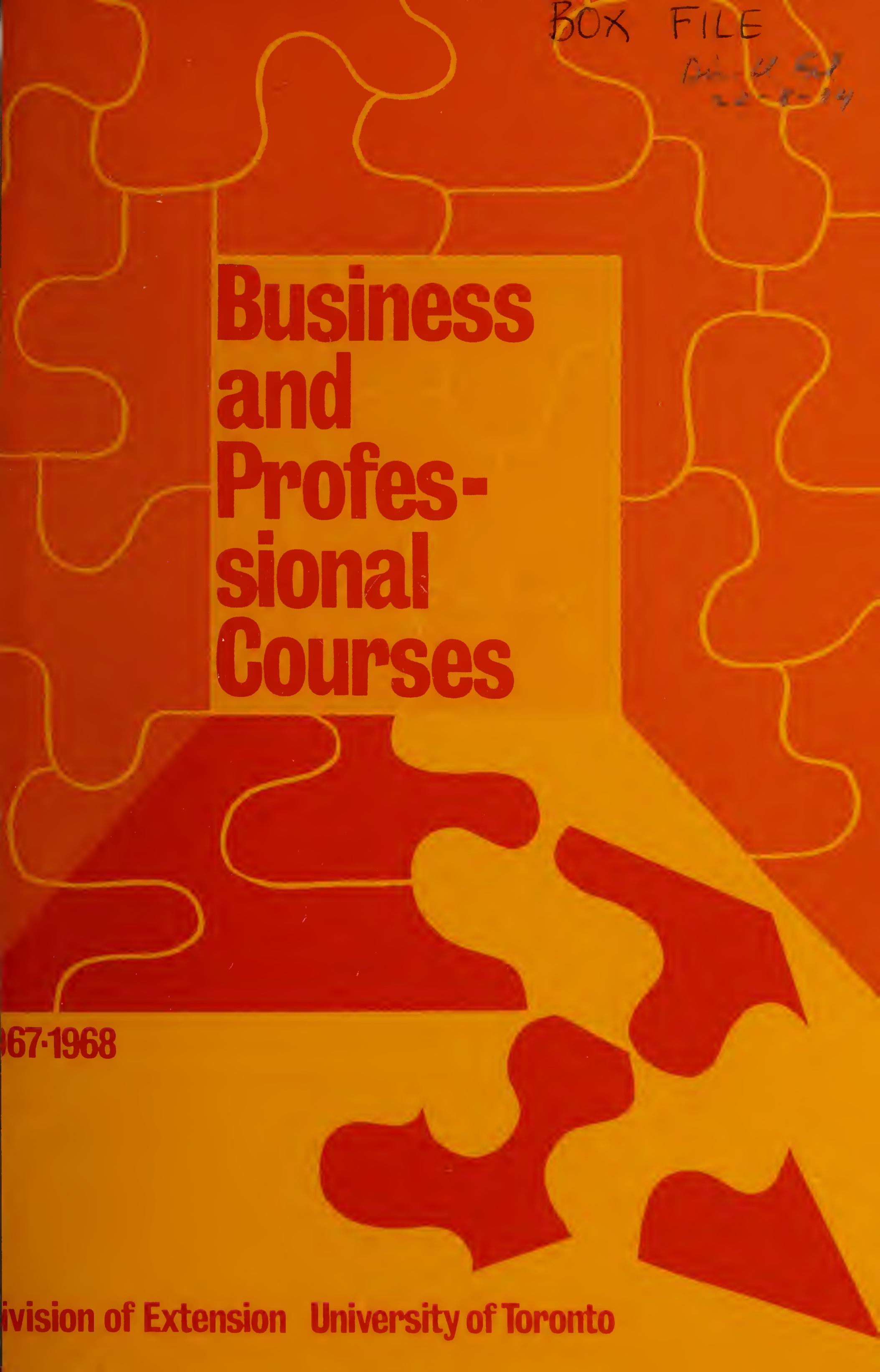
BOX FILE
[illegible]
[illegible]



Business and Professional Courses

967·1968

ivision of Extension University of Toronto

IMPORTANT NOTICE

1. Fees and other charges set forth in this calendar are subject to change by the Board of Governors without notice.
2. The Division of University Extension reserves the right to withdraw any subject listed in this calendar.

(05)

Business and Professional Courses

1967 – 1968

Division of Extension

UNIVERSITY OF TORONTO

TABLE OF CONTENTS

	PAGE
General Information	6
Courses for 1967–68	8
Map of Campus	11
Time-Table Data	12
Co-ordinated Programs	16
Special Lecture Programs	17
Division of Extension Programs in co-operation with the School of Business	18
Other Programs conducted by the Division of University Extension	19
School of Business Programs	20
Description of Courses	22
Calendars and Publications issued by the University of Toronto	50
Application Form	51

BUSINESS AND PROFESSIONAL COURSES

PURPOSE

The purpose of the Business and Professional Section of the Division of University Extension is to help men and women in business or other organizations and professionals to satisfy their educational needs.

Prime objectives of the Division of Extension in offering these courses are:

- To provide means for interested adults to further their education and training, in many cases regardless of the level of previous formal education.
- To impart knowledge in a variety of fields such as finance, economics, marketing, personnel, production, mathematics, science, and engineering.
- To give a better understanding of the nature of organizations, how they function and are managed.
- To improve professional understanding of new technical, mathematical, or business theories which have come to the fore in recent years.
- To create a forum for discussion of subjects common to class interest relating to new concepts, current practises, recent advances in technology or theory, and problem areas.
- To stimulate the mind to become both analytical and creative, posing questions, searching for answers, and applying solutions.

INSTRUCTION

Subjects are taught by a group of lecturers drawn from the University and the business community who have broad experience in the practical application of their particular subject. Most of the subjects are offered on the basis of a two-hour class once a week, running from 10 to 25 weeks. A few take the form of compact, full-time, two-day programs. Lectures, discussions, case studies, role playing and movies are the modes of instruction employed, varying from subject to subject.

Courses involving discussion and other class participation are limited in size. Some subjects are more advanced than others and admission to these may require a background of experience or previous participation in basic courses.

A number of co-ordinated programs have been developed, each consisting of a number of related subjects to be taken over a number of years. These offer a much fuller coverage of a field than is available in one course alone and are designed to help people who need a broader and deeper understanding of their field of work. All the subjects in these programs, however, may be taken individually. See the table of contents for more information on the co-ordinated programs.

BUSINESS AND PROFESSIONAL SECTION

Co-ordinator	M. R. Hecht, M.Sc.
Supervisor	L. G. Dutton, C.D., B.A.
Assistant	W. S. Jevons, B.A.
Co-ordinator of Engineering Programs	W. G. MacElhinney, M.A.Sc.

ADMINISTRATIVE OFFICERS

1966–1967

THE UNIVERSITY

President	C. T. Bissell, M.A., Ph.D., D.Litt., LL.D., F.R.S.C.
Executive Assistant to the President	D. F. Forster, B.A., A.M.
Vice-President and Provost	M. St. A. Woodside, M.A., LL.D.
Vice-Provost	J. H. Sword, M.A.
Vice-President (Health Sciences)	J. D. Hamilton, M.D., F.R.C.P.(C)
Vice-President (Research Administration)	G. de B. Robinson, M.B.E., B.A., Ph.D., F.R.S.C.
Vice-President for Scarborough and Erindale Colleges and Principal of Erindale College	D. C. Williams, M.A., Ph.D.
Chief Librarian	R. H. Blackburn, M.A., B.L.S., M.S., LL.D.
Vice-President (Administration)	F. R. Stone, B.Com., C.A.
Director of Finance	G. L. Court, D.F.C., M.Com., C.A.
Secretary of the Board of Governors and Director of Administrative Services	D. S. Claringbold
Director of Physical Plant	F. J. Hastie, B.Sc., P.Eng.
Registrar and Director of Student Services	R. Ross, M.B.E., M.A.
Executive Assistant to the Registrar	W. Kent, M.A.
Director of Admissions	E. M. Davidson, B.A.
Director of Student Awards	R. L. Purves, D.S.O., C.D., B.A.
Special Officer (Secondary School Liaison)	J. R. H. Morgan, M.B.E., M.A., B.Paed., LL.D.
Director of Statistics and Records	J. H. Tusiewicz, M.A.Sc., M.B.A.
Director of University Health Service	G. E. Wodehouse, M.C., M.D., F.R.C.P.
Assistant Director of University Health Service —Women	Miss F. H. Stewart, B.A., M.D.
Director of Placement Service	J. K. Bradford, O.B.E., M.A.Sc.
Director of International Student Centre	Mrs. K. Riddell, B.A.
Director of the Advisory Bureau	D. J. McCulloch, B.A., M.D., D.Psych., F.R.C.P.
Director of Housing Service	Mrs. M. G. Jaffary, B.A.
Director of University Extension	G. H. Boyes, M.A.
Director of University of Toronto Press	M. Jeanneret, B.A., LL.D.
Director of Information	K. S. Edey
Director of Alumni Affairs	J. C. Evans, B.A.
Director of Development	R. J. Albrant
Warden of Hart House	E. A. Wilkinson, B.A.
Director of Athletics and Physical Education —Men	W. A. Stevens, B.S.
Director of Athletics and Physical Education —Women (Acting)	Miss D. Jackson, B.A.Sc., M.A.

GENERAL INFORMATION

Registration

Students enrol by completing the application form on the final page of this booklet. Enrolment may be by mail or in person at the Division of University Extension, Room 201, 84 Queen's Park, Toronto 5, from 9 a.m. to 5 p.m. daily, except Saturdays. During the month of September and the first week of October, the Business and Professional Section will remain open on Tuesday and Thursday evenings until 8:30 p.m. to accept registrations. To phone for information call 928-2393.

Fees are payable in advance. Cheques or money orders should be made payable to the University of Toronto.

Admit-to-Lecture Card

When a student enrols in a course, he receives an admit-to-lecture card. This card must be shown at each lecture before entering the classroom.

Course Enrolment

Students are urged to enrol for fall term subjects before September 25 to ensure admittance. The date of the opening lecture of each course is indicated in the time-table. Winter term lectures begin the week of January 8.

In many classes, enrolment is limited to a specific number of students. If more than the stipulated number register for a particular course, an effort will be made to organize an additional class. A second class will not be offered, however, until a reasonable number of students have been accepted.

All courses are subject to change as to time and place before the beginning of the term. Students will be notified of any change.

For additional information, phone 928-2393

Refunds

Refunds will be considered *only* if they are requested in writing before the *second* lecture of the course is given. Because of the cost of making adjustments, a charge is made for each refund.

REQUESTS FOR REFUNDS MUST BE IN WRITING AND BE ACCOMPANIED BY ADMIT-TO-LECTURE CARDS AND THE OFFICIAL RECEIPT.

Admission Requirements

Unless otherwise indicated there are no academic requirements for admission to these courses. In the case of some subjects, applicants are asked to send, with their application, a brief résumé of experience so that we may assist the student to enter the appropriate class.

Recognition

Optional exams are offered in most courses. Those students who are successful in these will be advised of the results. When examinations are not suitable to the subject, other means of grading students are employed. Since instructors are not required to check attendance, letters cannot be issued certifying the attendance of an individual student in a particular course.

Unless otherwise specified, the courses offered in this brochure do not lead to a diploma or degree.

Parking

Students are urged to use public transportation, as parking is limited on or near the campus. A fee of 25c is charged at the parking lots on the West Campus (West of St. George Street) and at 113 and 126 St. George Street. Elsewhere on campus the fee is 50c.

COURSES FOR 1967–68

Economics and Finance Courses 22

1. Budgetary Controls
2. Business Finance
3. Business and Personal Finance
4. Business Taxation
5a. Economics—An Introduction
5b. Economics—An Introduction
6. Financial Analysis and Control
7a. Fundamentals for Non-Financial Managers
7b. Fundamentals for Non-Financial Managers—Scarborough
8. Money and Banking—*The Canadian Capital Market*

Management Courses 25

9. Administrative Practices
10. Background for Business Administration
11. Business Administration
12. Business Law
13. Business Management—Scarborough
14. Communications in Business—Written
15. Concepts in Management Science
16a. Effective Speech in Business
16b. Effective Speech in Business
17. Effective Supervision
18. Human Relations and Human Organization
19. Industrial Management
20. Interviewing and Counselling
21. Labour Economics
22. Labour Relations
23. Legal Aspects of Business
24. Management Principles and Organizational Behaviour
25. Manpower Planning and Management Development
26. Manufacturing Management
27. Mergers and Acquisitions
28. Motivation in Industry
29. Office Management—Introductory
30. Organizational Psychology (formerly Psychology in Industry)
31. An Overview of Personnel Administration
32. Person-Person Relations in Organizations
33. The Personnel Function
34. Personnel—Training
35. Theories of Organizational Behaviour

Marketing Courses 35

36. Advertising and Sales Promotion
37. Industrial Marketing
38. International Marketing

39a. Marketing Management
39b. Marketing Management—Scarborough
39c. Marketing Management—Erindale
40. Marketing Research
41. Sales Management
42. The Salesman's Role in the Marketing Function

Professional Courses 37

43. About Books for Children
44. Adult Learning and Teaching
45. Acoustics
46. Calculus for Engineers
47. Computer Programming and Analysis for Engineers
48. Concrete and Soil-Cement Paving
49. Dynamics of Aerospace Vehicles
50. Elements of Materials Science
51. Heavy Water Reactor Design Principles
52. High Speed Data Processing
53. Illumination I
54. Ilumination II
55. Introduction to Operations Research
56. Introduction to Solid State Physics
57. Introduction to Stochastic Processes and their Applications in Business and Engineering
58. Laplace Transformation for Engineers
59. Limit Design of Reinforced Concrete Structures
60. Linear Algebra and Matrices
61. Linear Programming and its Extensions
62. Matrix Methods in Engineering
63. Evaluation of Planning in Metropolitan Toronto
64. Organic Chemistry—Structure and Synthesis
65. The Physics Properties and Applications of Lasers
66. Probability Theory and Mathematical Statistics
67. Rocket Engineering
68. Simulation and Management Engineering Modeling
69. Statistical Decision Theory and Linear Programming
70. Statistical Methods
71. Structural Stability with Application to Steel Frameworks
72. Systems Engineering
73. Theory of Elasticity
74. Transportation System Planning
75. Ultimate Behaviour of Reinforced Concrete Members
76. Vibration Analysis
77. Writing Style in Professional Practice

In Planning Stage 49

78. Numerical Control in Industry

Co-ordinated Programs 16

A. Personnel—Industrial Relations
B. Manpower Development
C. Operations Research
D. Marketing

Special Programs 17

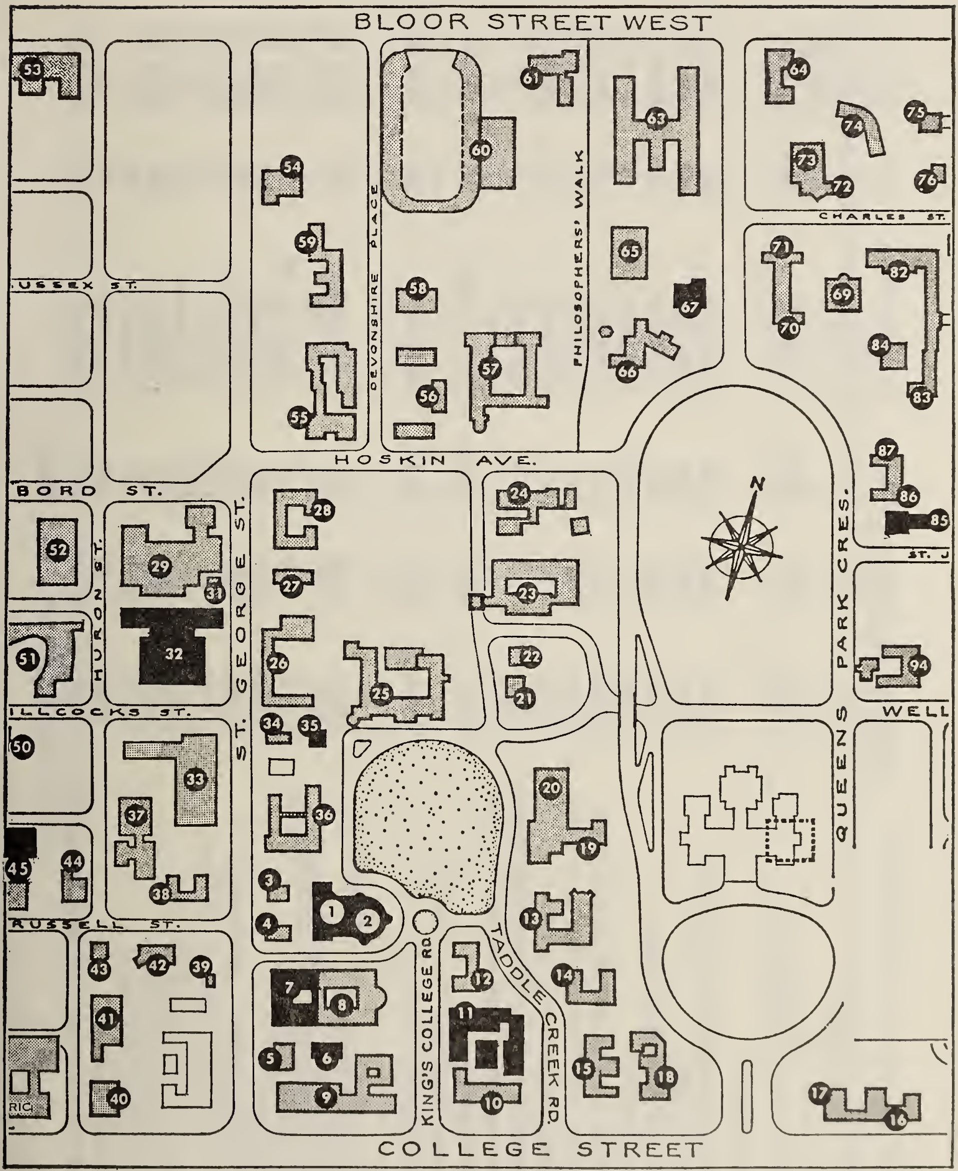
A. Administrative Management Society
B. Canadian Industrial Management Association
C. Society of Industrial and Cost Accountants
D. Canadian Bankers' Association
E. Institute of Chartered Accountants

Short Seminars 18

A. Developing the Management Development Program
B. Financial Markets
C. Managing the Engineering Function

FALCONER HALL, 84 Queen's Park
Division of University Extension Administrative Offices

THE ST. GEORGE CAMPUS



1	Simcoe Hall
6	Old Press Building
7	Galbraith Building
11	Mechanical Building
32	Sidney Smith Hall
35	Bookroom
45	Textbook Store
67	Division of Extension (Falconer Hall)
85	Carr Hall

Institute for Aerospace Studies — Steeles Ave. & Dufferin St.

TIME TABLE DATA

Course	*Day*	*Time*	*Room*	*Building*	*Fee*	*Starting Date*
Economics and Finance						
1. Budgetary Controls	Mon.	6:00	116	Galbraith	$25	Oct. 16
2. Business Finance	Tues.	7:00	406	Carr Hall	40	Oct. 10
3. Business and Personal Finance	Tues.	7:00	316	Galbraith	75	Sept. 26
4. Business Taxation	Wed.	7:30	248	Galbraith	60	Sept. 27
5a. Economics—An Introduction	Thurs.	8:15	243	Galbraith	75	Sept. 28
5b. Economics—An Introduction	Thurs.	6:00	243	Galbraith	75	Sept. 28
6. Financial Analysis and Control	Mon.	6:00	319	Galbraith	75	Sept. 25
7a. Fundamentals for Non-Financial Managers	Tues.	8:15	204	Galbraith	50	Oct. 10
7b. Fundamentals for Non-Financial Managers —Scarborough	Mon.	7:00	H308	Scarborough	50	Oct. 16
8. Money and Banking—The Canadian Capital Market	Mon.	6:30	220	Galbraith	60	Oct. 16
Management						
9. Administrative Practices	Wed.	6:00	243	Galbraith	60	Oct. 11
10. Background for Business Administration	Tues.	7:00	244	Galbraith	75	Sept. 26
11. Business Administration	Tues.	6:00	2135	Sidney Smith	45	Oct. 10
12. Business Law	Thurs.	7:30	305	Galbraith	50	Oct. 12
13. Business Management—Scarborough	Tues.	7:30	H309	Scarborough	45	Oct. 10
14. Communications in Business—Written	Thurs.	7:30	116	Galbraith	40	Oct. 12
15. Concepts in Management Science	Tues.	7:30	404	Mechanical	60	Oct. 10
16a. Effective Speech in Business	Tues.	7:30	107	Galbraith	50	Oct. 10
16b. Effective Speech in Business	Wed.	7:30	107	Galbraith	50	Oct. 11
17. Effective Supervision	Thurs.	7:30	405	Carr Hall	50	Oct. 12
18. Human Relations and Human Organization	Wed.	7:00	Bd Room	Falconer	75	Oct. 11

TIME TABLE DATA (*Continued*)

Management (*Concluded*)						
19. Industrial Management	Thurs.	7:30	221	Galbraith	$75	Sept. 28
20. Interviewing and Counselling	Mon.	7:30	Sun Room	Falconer	75	Sept. 25
21. Labour Economics	Tues.	7:30	405	Carr Hall	75	Sept. 26
22. Labour Relations	Tues.	7:30	221	Galbraith	75	Sept. 26
23. Legal Aspects of Business	Wed.	7:30	316	Galbraith	75	Sept. 27
24. Management Principles and Organizational Behaviour	Wed.	6:00	252	Mechanical	75	Sept. 27
25. Manpower Planning and Management Development	Wed.	6:00	405	Carr Hall	60	Oct. 11
26. Manufacturing Management	Mon.	7:30	108	Falconer	50	Oct. 16
27. Mergers and Acquisitions	Thurs.	7:30	406	Carr Hall	40	Sept. 28
28. Motivation in Industry	Mon.	7:30	406	Carr Hall	25	Oct. 16
29. Office Management—Introductory	Tues.	7:30	248	Galbraith	25	Oct. 10
30. Organizational Psychology (formerly Psychology in Industry)	Wed.	7:30	404	Carr Hall	75	Sept. 27
31. An Overview of Personnel Administration	Wed.	7:30	119	Galbraith	75	Sept. 27
32. Person–Person Relations in Organizations	Tues.	7:30	Sun Room	Falconer	75	Oct. 10
33. The Personnel Function	Wed.	7:00	406	Carr Hall	75	Sept. 27
34. Personnel—Training	Wed.	7:30	220	Galbraith	40	Oct. 11
35. Theories of Organizational Behaviour	Wed.	7:30	403	Carr Hall	35	Oct. 11
Marketing						
36. Advertising and Sales Promotion	Thurs.	7:30	248	Galbraith	30	Oct. 12
37. Industrial Marketing	Mon.	7:30	119	Galbraith	30	Oct. 16
38. International Marketing	Thurs.	7:00	404	Carr Hall	50	Oct. 12
39a. Marketing Management	Mon.	7:30	244	Galbraith	50	Oct. 16
39b. Marketing Management—Scarborough	Tues.	7:30	S128	Scarborough	50	Oct. 10

TIME TABLE DATA (*Continued*)

Course	*Day*	*Time*	*Room*	*Building*	*Fee*	*Starting Date*
Marketing (*Concluded*)						
39c. Marketing Management—Erindale	Thurs.	7:00	241	Erindale	$50	Oct. 12
40. Marketing Research	Thurs.	7:30	402	Mechanical	30	Oct. 12
41. Sales Management	Mon.	7:30	119	Galbraith	30	Jan. 8
42. The Salesman's Role in the Marketing Function	Tues.	7:30	403	Carr Hall	30	Oct. 10
Professional						
43. About Books for Children	Tues.	8:00	L.T.	40 St. George	35	Sept. 26
44. Adult Learning and Teaching	Wed.	6:30	314	Galbraith	75	Sept. 27
45. Acoustics	Thurs.	7:00	206	Old Press	60	Oct. 10
46. Calculus for Engineers	Mon.	7:00	404	Mechanical	60	Sept. 25
47. Computer Programming and Analysis for Engineers	Tues.	7:30	119	Galbraith	75	Sept. 26
48. Concrete and Soil-Cement Paving	Thurs.	7:30	216	Galbraith	35	Oct. 12
49. Dynamics of Aerospace Vehicles	Wed.	7:30	L.R.	Aerospace	75	Sept. 27
50. Elements of Materials Science	Tues.	7:30	L.R.	Aerospace	75	Sept. 26
51. Heavy Water Reactor Design Principles	Wed.	7:00	304	Galbraith	60	Oct. 11
52. High Speed Data Processing	Thurs.	7:30	120	Galbraith	55	Oct. 12
53. Illumination I	Tues.	7:00	205	Old Press	40	Sept. 26
54. Illumination II	Tues.	7:00	205	Old Press	40	Jan. 9
55. Introduction to Operations Research	Thurs.	7:30	204	Galbraith	55	Oct. 12
56. Introduction to Solid State Physics	Mon.	7:00	216	Galbraith	60	Sept. 25
57. Introduction to Stochastic Processes and their Applications in Business and Engineering	Tues.	7:30	120	Galbraith	65	Sept. 25
58. Laplace Transformation for Engineers	Tues.	7:30	252	Mechanical	65	Sept. 26

TIME TABLE DATA (*Concluded*)

Professional (*Concluded*)

59. Limit Design of Reinforced Concrete Structures	Tues.	7:00	216	Galbraith	$55	Oct. 10
60. Linear Algebra and Matrices	Tues.	7:30	304	Galbraith	65	Sept. 26
61. Linear Programming and its Extensions	Thurs.	7:30	119	Galbraith	65	Sept. 28
62. Matrix Methods in Engineering	Mon.	7:30	254	Mechanical	65	Sept. 25
63. Metropolitan Toronto Planning	Mon.	7:30	403	Carr Hall	40	Jan. 8
64. Organic Chemistry—Structure and Synthesis	Wed.	7:30	404	Mechanical	25	Jan. 10
65. The Physics Properties and Applications of Lasers	Mon.	7:30	L.R.	Aerospace	65	Sept. 25
66. Probability Theory and Mathematical Statistics	Thurs.	7:30	220	Galbraith	65	Sept. 28
67. Rocket Engineering	Mon.	7:30	402	Mechanical	65	Sept. 25
68. Simulation and Management Engineering Modeling	Mon.	7:30	107	Galbraith	55	Sept. 25
69. Statistical Decision Theory and Linear Programming	Tues.	7:30	314	Galbraith	55	Oct. 10
70. Statistical Methods	Thurs.	7:30	107	Galbraith	40	Oct. 12
71. Structural Stability with Application to Steel Frameworks	Tues.	7:30	243	Galbraith	65	Sept. 26
72. Systems Engineering	Thurs.	7:30	404	Mechanical	65	Sept. 28
73. Theory of Elasticity	Thurs.	7:30	L.R.	Aerospace	65	Sept. 28
74. Transportation System Planning	Tues.	7:00	404	Carr Hall	65	Sept. 26
75. Ultimate Behaviour of Reinforced Concrete Members	Wed.	7:30	116	Galbraith	60	Oct. 11
76. Vibration Analysis	Tues.	7:00	402	Mechanical	65	Sept. 26
77. Writing Style in Professional Practice	Mon.	7:30	403	Carr Hall	45	Sept. 25

CO-ORDINATED PROGRAMS

In a number of areas courses have been co-ordinated so that a person may take a series of subjects over a few years. These give a far greater understanding of an area than is possible with a single course. The purpose of these co-ordinated programs is to provide continuing education on a step-by-step basis in many fields. While any person with sufficient background in a subject may take any individual course, those who are interested in a co-ordinated set should follow the order of sequence when one is suggested.

A. Personnel-Industrial Relations*

(Certificate to be awarded after completion of six full courses by the Personnel Association of Toronto or the Public Personnel Association.)

Subjects to be offered 1967–68.

1. Economics—An Introduction
2. The Personnel Function
3. Labour Economics
4. Organizational Psychology
5. Management Principles and Organizational Behaviour (to be taken in final year)
6. Labour Relations

(For details of each subject refer to the course descriptions.)

B. Manpower Development*

(Certificate to be awarded after completion of six full courses by the Ontario Association of Training and Development.)

Subjects to be offered 1967–68.

1. Organizational Psychology
2. Adult Learning and Teaching
3. Industrial Management
4. An Overview of Personnel Administration
5. Budgetary Controls (half course)
6. Interviewing and Counselling

Subjects to be available at a later date.

7. Communications in Business
8. Statistical Methods (half course)

(For details of each subject refer to the course descriptions.)

*Persons interested in these certificate courses should phone 928–2400 or 928–2401 for more information and a special brochure.

C. Operations Research

The following courses will provide a good understanding of Operations Research. For those with insufficient background, introductory courses are available. These are *Introduction to Operations Research* and *High Speed Data Processing.*

Subjects are:

1. Linear Algebra and Matrices
2. Linear Programming and its Extensions
3. Probability Theory and Mathematical Statistics

4. Introduction to Stochastic Processes & their Application in Business and Engineering
5. Statistical Decision Theory and Linear Programming
6. Simulation and Management Engineering Modeling

(For details of each subject, refer to the course descriptions.)

D. Marketing

Subjects offered are:

1. Marketing Management
2. Marketing Research
3. Sales Management
4. Industrial Marketing
5. Advertising & Sales Promotion
6. International Marketing
7. The Salesman's Role in the Marketing Function

(For details of subjects, refer to the course descriptions.)

SPECIAL LECTURE PROGRAMS

Five lecture programs are conducted by the Division of Extension for outside organizations. These are:

(A) The Administrative Management Society

A four-year program of study leading to the designation C.O.A. (Certified Office Administrator). The student must first complete the three-year Certificate Course in Business offered by the Division of Extension. Graduates of this course or holders of a B.Com. degree may then register for the final year and, upon successful completion, receive the AMS certificate.

Subjects covered include: Accounting, Economics, Business Organization, Business Finance, Business Law, Marketing, Personnel, Production, Statistics, Office Management.

(B) The Canadian Industrial Management Association

A four-year program of study leading to the designation C.I.M. (Certified Industrial Manager).

1st year—Business Organization and Accounting
2nd year—Engineering Economics and Industrial Engineering
3rd year—Manufacturing Controls and Marketing
4th year—Industrial Relations, and Cases and Problems in Administration
St. George campus (downtown)—complete program
Scarborough College—first year only

Information pertaining to education requirements, fees, and registration may be obtained by contacting Canadian Industrial Management Association, 51 Eglinton Ave. East, Room 304, Toronto 12. Phone 485-5747.

(C) The Society of Industrial and Cost Accountants

A five-year program of study leading to the designation R.I.A. (Registered Industrial Accountant).

1st Year—Accounting Fundamentals, Industrial Legislation
2nd Year—Accounting II, Managerial Statistics, Report Writing
3rd year—Advanced Accounting, Industrial Organization and Management
4th year—Cost Accounting and Systems, Auditing
5th year—Cost and Management Accounting

St. George campus (downtown)—complete program
Erindale College—1st year only
Scarborough College—1st and 2nd year only

Information pertaining to education requirements, fees, and registration may be obtained by contacting S.I.C.A. of Ontario, Room 1020, 25 Adelaide St. E., Toronto. Phone 363–8191.

(D) The Canadian Bankers' Association

The Fellows' Course in Banking is designed specifically for staff members of Canadian chartered banks. Its purpose is to provide formal education for men and women who wish to prepare themselves for responsible positions in banking. Subjects covered include: The Banker and Society, Background for Business Administration, Financial Analysis and Control, Communications, Economics, Legal Aspects of Business, Business and Personal Finance, Management I, Management II, and Changing Business and Industrial Environment. Two subjects may be undertaken each year with ten subjects constituting the full program. Upon graduation a certificate is awarded by the Canadian Bankers' Association.

For further information, contact the staff or personnel department of your bank.

(E) Institute of Chartered Accountants of Ontario

A three-year program of study leading to the designation C.A. (Chartered Accountant). A four-week, full-time course is offered each summer, usually in August. A B.Com. degree is required to register in the program.

For information, contact the Institute of Chartered Accountants of Ontario, 69 Bloor St. E., Toronto 5. Phone 927–1841.

DIVISION OF EXTENSION PROGRAMS IN CO-OPERATION WITH THE SCHOOL OF BUSINESS

A. DEVELOPING THE MANAGEMENT DEVELOPMENT PROGRAM

A two-day seminar to discuss the growing role of management development programs in business and other organizations. The changes will be discussed along with examples of developing programs in a number of Canadian firms. Scheduled for February 8–9, 1968.

B. FINANCIAL MARKETS

A two-day seminar to examine research into financial markets. The aim of this program is to provide an understanding of the implications of the research work and the outlook for the future. This will not be a highly technical program but intended for those in charge of operating and analyzing the financial needs of their organizations. Scheduled for February 29 and March 1, 1968.

C. MANAGING THE ENGINEERING FUNCTION

A two-day seminar to examine; through discussion, lecture and case study; the organization and control of the engineering function, the changing role of engineering today, management development and motivation of engineers; computer developments applicable to the design function. Scheduled for October 25, 26 and 27 in co-operation with Urwick, Currie Limited and The Association of Professional Engineers of Ontario.

OTHER PROGRAMS CONDUCTED BY THE DIVISION OF UNIVERSITY EXTENSION

The Division of University Extension offers many other courses and services. Readers of this calendar are invited to ask about:

GENERAL ARTS COURSE, EXTENSION—leading to the Bachelor of Arts degree.

GENERAL SCIENCE COURSE, EXTENSION—leading to the Bachelor of Science degree.

DEGREE COURSE FOR GRADUATES OF DIPLOMA SCHOOLS OF NURSING, EXTENSION—leading to the Bachelor of Science in Nursing degree.

EVENING AND AFTERNOON COURSES IN THE LIBERAL ARTS—provide a wide range of cultural and non-technical courses for those who are not seeking credit. Courses offered are: Anthropology, Art Appreciation, Art of Speech, Astronomy, Ballet and Opera, Communication and Diction, Oral Communication, English Composition, English Literature, Mastering Good English, Exercises for Health, French, French for Businessmen, German, Interior Design, International Affairs, Islam, Italian, Journalism, Law and the Layman, Law and the Woman, Civil Liberties, Introduction to Logic, Magazine Article Writing, Introduction to Medical Microbiology, Metropolitan Scene, Music, Philosophy, Piano, Political Science, Psychology, Religion, Natural Science, Spanish, Introduction to Viruses and Virus Diseases, Existentialism, and Royal Ontario Museum Courses: Digging into the Past, Geology in the Museum and In Search of the West and Northern Territories.

FRENCH SUMMER SCHOOL—SAINT PIERRE ET MIQUELON offers non-credit oral courses in beginners, intermediate and advanced French. For the student who cannot go to France in the summer, St. Pierre et Miquelon offers, at a fraction of the cost, the next best opportunity to experience a memorable and profitable holiday on French soil.

CERTIFICATE COURSE IN PUBLIC ADMINISTRATION is intended primarily for those with considerable experience in the public service who wish to acquire a broader background in the political and social sciences essential to an understanding of the executive branch of government and its functions. It is not intended as preparation for those planning to enter public service. Emphasis is on Canadian governments at all levels (federal, provincial and municipal), and their major problem areas.

The program consists of six subjects, four of which, Political Science, Economics, Public Administration, and Social Factors of Administration, are compulsory. Two optional subjects are selected from the following group: Economic Development of Canada, Urban Geography, Intergovernmental Relations and Local Government, and Modern Social and Political Ideas. Students may enrol in not more than two subjects each year. Thus, the program can be completed in a minimum of three years.

CERTIFICATE COURSE IN CRIMINOLOGY. This course is intended for those with considerable experience in the fields of law enforcement, criminology, adjudication, and the correctional services, who wish to deepen their knowledge and understanding of criminology in its various aspects. It examines some of the basic problems of crime, the administration of criminal justice, and the treatment of offenders. One or two subjects may be undertaken each year with six subjects constituting a full program.

CORRESPONDENCE COURSES are conducted by the Extension Division for the organizations listed below. A variety of subjects is available; each organization enrols students in a course consisting of the subjects appropriate to its requirements and grants recognition for successful completion.

The Association of Administrative Assistants, the Association of Personnel in Employment Security, the Association of Professional Engineers, the Canadian Credit Institute, the Canadian Institute of Realtors, the Canadian Institute of Traffic and Transportation, the Chartered Institute of Secretaries, the Chemical Institute of Canada, the Ontario Association of School Business Officials.

Further information may be obtained by telephoning 928–2393.

CERTIFICATE COURSE IN BUSINESS. Providing instruction in the basic principles of modern business, this course is designed for mature men and women in business, industry and the Civil Service who are in or working toward, positions of responsibility.

The course consists of six subjects, three obligatory and three options. The obligatory subjects are Accounting, Economics, and Business Organization. The three optional subjects are chosen from: Business Finance, Business Law, Personnel, Production, Statistics, and Marketing.

SCHOOL OF BUSINESS PROGRAMS

The School of Business sponsors a number of part-time special programs. Through these programs, practising business people can be made aware of research programs being carried out and can evaluate and suggest direction for such activity. Similarly, faculty members can test the practicability and application of new concepts being developed in the academic business institutions, which can be of great value in the normal conduct of graduate education in business .

Special programs include short seminars, one-day conferences, a summer residential program for executives, and a winter evening series of meetings: the Management of the Enterprise Seminar. These are outlined in more detail below.

MANAGEMENT OF THE ENTERPRISE

This series of dinner meetings is designed for executives who hold positions of responsibility and who have had considerable experience in some phase of management. At each meeting the group hears a concise and provocative presentation of a topic of interest to the general manager. This is followed by question and discussion.

The objective of Management of the Enterprise is to examine and assess current developments in administration and business. Seminars are held once a week from October until March.

BUSINESS OUTLOOK SEMINAR

This annual one-day conference, to be held December 6, brings business executives together to examine the prospective business climate for the coming year. Business leaders and staff members of the School present, for discussion, their views on the outlook in general and in various industries.

DISTINGUISHED LECTURE SERIES

Each year a leading exponent of some aspect of business is invited to present a few lectures at the University. Past speakers have been Dr. Herbert Simon of the Carnegie Institute of Technology and Dr. Peter Drucker. Dates to be announced.

MANAGING THE DYNAMIC ORGANIZATION

A one-day conference to explore the problem of making the organization innovative on a regular basis and how to manage change. Concepts and cases will be examined by prominent speakers. This conference is being conducted in co-operation with the Faculty of Engineering on November 15, 1967.

ECONOMICS AND FINANCE COURSES

1. Budgetary Controls

W. G. PEAKER

This 10-session course will include the study of the nature and purpose of budgets; benefits to be gained and disadvantages to be avoided. Types of budgets will include those used for sales or revenue, purchases or production costs, selling expenses, general and administrative expenses, other expenses, cash and capital expenditures. Preparation of budgets, including delegation of responsibility and organization, will be discussed as will methods of analysis of company budgets. Case studies will be employed.

TEXT: Glenn A. Welsch, *Budgeting: Profit Planning and Control.* 2nd edition. Englewood Cliffs, N.J. Prentice-Hall 1964.

2. Business Finance

B. BLASDALE

Twenty sessions. Although the main emphasis is on the financial problems of the corporation as seen by the financial manager, some time will be spent on the particular problems of small business.

Sources of funds will be considered in relation to the uses of these funds and in relation to the implications of risk, income and control, for the creditor and the debtor.

Assessment of the expected returns on capital projects, the flow of funds, mergers and consolidations are among the other subjects to be explored.

This course will be conducted through case studies as the basis for class discussion. Students will be expected to spend 3 to 5 hours per week in preparation.

An introductory knowledge of accounting and financial analysis would be helpful but not essential.

TEXT: Hunt, Williams, & Donaldson—*Basic Business Finance*, Richard D. Irwin Inc., 3rd ed.

3. Business and Personal Finance

J. THORNE

This is a 25-session course especially adapted to those working in financial institutions.

Areas of examination relating to business finance will be:

- sources of funds, both long and short term, in relation to need for funds in relation to risk implications as seen from both lender and borrower viewpoints;
- forecasting of finance requirements;
- principles of insurance;
- governmental regulation of financial activities.

Personal finance studies will consider the household as a socio-economic organization treating such areas as:

- analysis of current operations;
- budgeting;
- investments in property, education, stocks;
- equipping a household;
- protection through life insurance, pensions, wills and estate planning.

4. Business Taxation

J. R. HUTCHINSON

This 25-session course is designed to give the executive an understanding of those aspects of taxation which will frequently confront him when making business decisions. Typical items covered are: amalgamations, depreciation policy, dividend policy, etc.

As well as executives, this course should be of particular interest to trust company trainees and life underwriters. It should also be useful to chartered accountants and lawyers who received their training outside Canada and who wish to become familiar with Canadian tax law.

The general plan will be to outline the relevant tax regulations covering a given topic, to give illustrative examples and to discuss the implications of the regulations. In addition to acquiring an appreciation of existing tax law, it is intended that the executive will become familiar with the sources of information covering present and future regulations.

Because of the probable implementation of part or all of the "Carter Report on Taxation," emphasis will be given to the impact of this report on taxation practices in Canada.

The major topics are listed below:

- Corporation Income Tax
- Depreciation
- Arms Length Transactions
- Purchase and Sale, Amalgamation of Businesses
- Stock Options, Pension Plans, Profit Sharing Plans
- Capital Gains
- Gift Tax
- Succession Duties and the Estate Tax Act
- Trends in Taxation

TEXT: None.

5. Economics—An Introduction

C. HALL, J. I. MCDONALD

Twenty-five sessions. The elements of economic theory will be developed and illustrated with reference to contemporary economic problems.

Lectures will include discussion of the following topics:

- Price Theory and Application
- Money and Banking
- National Income
- Business Cycles and Economic Growth
- International Trade

Each class will be limited to 40 students.

TEXT: Samuelson/Scott—*Economics—An Introductory Analysis,* McGraw Hill Can. ed. 1966.

6. Financial Analysis and Control

J. M. SWINDEN

This is a 25-session course whose purpose is to give those business people who have some knowledge of accounting, a greater understanding of the problems involved in the preparation, analysis and interpretation of financial statements and the techniques of financial control.

The area of financial statements will be examined with consideration of such topics as:

- generally accepted accounting principles of asset valuation and income measurement;

- underlying assumptions, composition and limitations of financial statements;
- interpretation of financial statements;
- the concept of fund flows;
- determinates of fund needs;
- form, content and legal requirements of the balance sheet, and statements of profit and loss, earned surplus and sources and application of funds.

Control aspects to be considered are:

- costs—direct, indirect, managed, committed;
- budgeting—fixed, variable;
- analysis of variances;
- appraisal of capital expenditures.

Reference is made throughout the course to a few published reports of large Canadian public companies.

7. Fundamentals for Non-Financial Managers

J. HOWARD, W. A. R. MACFADDEN

This 20-session course is designed specifically to convey fundamental concepts, principles and practices of finance and accounting to operating managers. The course begins with sessions on the basic principles of bookkeeping and accounting and goes on to review financial statement analysis, cost accounting and methods of finance. The lecture-discussion method concentrates on the influence which these financial and accounting concepts have on the interpretation of results, planning, and their influence on decision making.

Each class will be limited to 50 students.

TEXT: Meigs, Johnson, Blazouske—*Accounting, The Basis for Business Decisions*, McGraw-Hill (Canadian Edition).

Please indicate on application form whether St. George or Scarborough campus.

8. Money and Banking—*The Canadian Capital Market*

P. A. T. CAMPBELL

The purpose of this 20-session course is to examine the structure of the various markets that combine to form the Canadian capital market. These markets would include the bond, mortgage, stock, foreign exchange and negotiated loan markets. Special attention is paid to the Canadian banking system which dominates the capital market. Interest arbitraging relationships between Canada and the United States are examined in detail. The uses to which Canada's monetary authorities, the Bank of Canada and the Department of Finance, put the Canadian capital market to further specific and macro-economic policy goals are continuing themes.

The class will be limited to 50 students.

TEXT: Report of the Royal Commission on Banking and Finance.

MANAGEMENT COURSES

9. Administrative Practices — R. J. PORTER

The function of the administrator and the general nature of administration are the major subjects to be studied in this 20-session series. The first lectures will be devoted to the study of planning, organizing, directing and controlling. Later sessions will deal with administrative techniques employed in management. The emphasis will be on class discussion. Cases, films and an extensive reading list will help to provide background for discussion.

The course is of particular value to owners or managers of medium sized enterprises, and those who have total responsibility for a division of a large corporation.

Practical experience in administration at a relatively high decision-making level is a prerequisite for admission. Students are required to submit a brief résumé of experience with application forms.

The class will be limited to 35 students.

TEXT: Newman and Sumner—*The Process of Management*, Prentice-Hall 1962.

10. Background for Business Administration — W. D. HAMMOND

This 25-session course is designed to give students a knowledge of the many factors involved in the management of a business. All aspects that underlie the successful operation of a business organization will be discussed with particular emphasis on the expanding area of computerization and the contributions of the behavioural sciences. The administrative process of planning, organizing, directing, controlling, staffing, leading, and measuring will be examined. Some time will be spent on explaining the business operations of the various departments in a company such as law, finance, personnel, marketing, production advertising, data processing, among others. Although this course will consist mainly of lectures and discussions, a limited number of case studies will be used.

TEXT: Terry, G. R.—*Principles of Management*, Richard D. Irwin Inc. 4th ed.

11. Business Administration — W. A. DIMMA

This 20-session course encompasses the broad fields of accounting and finance, marketing, manufacturing, personnel relations, and general management. In twenty sessions of two hours each, four lecturers will range across a wide number of the phases of business rather than examine and treat a lesser number of topics more exhaustively.

Because the course is aimed primarily at those above, at or near the middle-management level, a requirement of admission is a general knowledge of business, including at least two years' practical experience. It is recommended that applicants have a minimum educational level of Grade XIII or equivalent, although exceptions will be made for those with at least five years' business experience.

TEXT: Reading list provided during course.

12. Business Law — J. I. STEWART

The lectures in this 20-session course will be aimed at counselling an average businessman with particular emphasis on the person who now operates or intends to operate his own business. It has been found useful by personnel of credit and contract departments, bankers, sales representatives, executives, legal secretaries and comparable persons.

Included in the topics which will be dealt with are:

- Introduction to the legal system
- The making of contracts
- Contracts for the sale of goods
- Real estate law
- Municipal laws, zoning and assessment
- Sole enterprise, partnership, and corporation law
- Combinations in restraint of trade

The course is designed to be practical and informative, but not a substitute for legal advice. Students will be given sources of information and projects will be assigned.

The class will be limited to 50 students.

TEXT: *Anger's Digest of Canadian Law*, Canada Law Book Company Ltd.

13. Business Management

J. BULLOCH

This 20-session program is a broad introductory course in business management, covering five general areas: marketing, production, personnel, finance, and management.

Topics to be covered include:

- The consumer, product policy, channels of distribution, advertising and selling
- Inventory control, production control, wage and salary administration
- Human relations; recruitment, selection and training; union-management relations
- Financial analysis, financial planning, asset management, sources of funds
- Small business management; general management

Applicants should have successfully completed Grade 13 or have several years of practical business experience. Students are required to prepare a business case each week.

TEXT: Thain, Wettlaufer & Martin—*Business Administration in Canada*, McGraw-Hill.

14. Communications in Business—Written

R. N. BEATTIE

This 20-session course is designed for supervisors who are required to write letters, memoranda, reports, instructions, and other business communications. The planning and writing of these is the principal subject of discussion and practice, although the course does include some review of English grammar, usage and composition. It is desirable for students to have Grade XIII English Composition, or its equivalent.

TEXT: Reid and Wendlinger—*Effective Letters, A Program for Self-Instruction*, McGraw-Hill, 1964. Bernstein, T. M.—*The Careful Writer, a Modern Guide to English Usage*, Atheneum, 1965. Additional reading material and references will be supplied in class.

15. Concepts in Management Science

D. J. CLOUGH

This 20-session course integrates many important aspects of management science, emphasizing the contributions of the physical and behavioural sciences, engineering, economics and mathematics.

From the historical development of classical management principles, the course traces the applications of social psychology, decision theory, feedback control, and organization theory to the contemporary problems of decision-making and leadership.

Continuing with an evaluation of relevant economic concepts as bases for both qualitative and quantitative analyses, there are detailed discussions of competitive structure, demand analysis, production activity analysis, and the interaction of pricing, promotion and product-line strategies.

The power, scope and limitations of mathematical models in management science are portrayed through discussions of various applications in production, marketing, advertising, and other fields.

The course is designed to give a broad survey of a new and rapidly developing field.

TEXT: Donald J. Clough—*Concepts in Management Science*, Prentice-Hall.

16. Effective Speech in Business

H. TUCKER

Twenty sessions. The first term will be devoted to improving skills in oral communications with emphasis on the voice and personal composure in group situations. The second term will deal with the delivery of reports and public speeches. It will give training in chairmanship, conduct of meetings, impromptu speech and parliamentary procedure.

This is not a course for the correction of speech defects. Each class is limited to 30 students. A letter should accompany the application and should state the candidate's background and reasons for wishing to take this course.

Tuesdays—For the young executive and those without previous training.

Wednesdays—For the senior executive requiring speech experience.

TEXT: Sandford & Yeager—*Effective Business Speech*, McGraw-Hill.

17. Effective Supervision

J. WAINWRIGHT

This 20-session course is designed for foremen and supervisors in business and industry who wish to increase their managerial effectiveness. Course content will include: principles of supervision, developing leadership skills, setting operating objectives and standards of performance, discipline, delegation, performance appraisal, communications, motivation, training, hiring, interviewing, handling grievances, employee counselling, job evaluation, wage and salary administration and management of time.

Material will be presented by various methods, including: lectures, group discussions, case studies, and films.

TEXT: *Leadership on the Job*, American Management Association Inc., 1966.

18. Human Relations and Human Organization

M. WILSON

The purpose of this 20 2½-hour session series is to provide those attending with a means of developing their relationship skills. It is intended for persons who are interested primarily in making practical improvements rather than in the mastery of a body of theoretical knowledge.

Often such skills develop best in a learning situation which allows participants to experiment with new ways of looking at problems and working with others. Consequently, while some lecture and demonstration material will be presented, discussion techniques will be used extensively. An informal atmosphere which promotes a free exchange of experiences and increased sensitivity to others will be encouraged. There will be no examinations, but participants will be expected to undertake at least two assignments.

This series will be of particular interest to persons preparing themselves for broader responsibilities. Participants should have a good management background.

Registrants are required to submit a brief résumé of their experience along with their application form. The class will be limited to 25 students.

TEXT: None.

19. Industrial Management — W. T. NUTSON

This 25-session study of the principles and techniques of industrial management divides broadly into two general areas:

An introduction to modern management thought with the subsequent emphasis on people—both manager and those managed—relative to organization research and theory, motivation, incentives and morale, policy formulation, planning and decision making;

A broad introduction to the physical make-up of an industrial organization. In this second category, there will be a discussion of line and staff functions, and their interrelationship.

The significance of good control as a function of industrial engineering, production planning and accounting will be amplified.

The class will be limited to 50 students.

TEXT: Haynes and Massie—*Management—Analysis, Concepts and Cases*, Prentice-Hall.

20. Interviewing and Counselling — J. C. CHISHOLM

This 25-session course is designed to help the manager, the supervisor and the personnel worker to improve his interviewing skills. Course content will include both theory and practise with emphasis on application. Students will be given the opportunity to practise these skills in the classroom setting through role playing, observation, and practise exercises. The types of interviews covered will be those commonly used in a business and industrial setting; i.e. employment, termination, corrective, promotion, appraisal, and counselling.

Students are required to submit a brief résumé of their experience with application forms. For those students enroled in the Manpower Development Certificate Course, “Adult Learning and Teaching” and “Organizational Psychology” (formerly “Psychology in Industry”) are prerequisites.

The class will be limited to 30 students.

TEXT: Kahn and Cannell—*The Dynamics of Interviewing*, J. Wiley & Sons.

21. Labour Economics — D. STAGER

This 25-session course will attempt to look at labour economics in the light of changing technology and its influence on the nature of work and income. Topics to be covered include: wage theories and wage determination, union influence on relative wages, and the relationship of wages, productivity and inflation. Definitions and measures of the labour force and labour supply are also included. Considerable emphasis will be placed on unemployment, especially structural unemployment, and policies for dealing with this. The course concludes with the consideration of manpower development and utilization policies.

TEXT: L. G. Reynolds—*Labor Economics and Labor Relations*, Prentice-Hall, 1964, 4th ed.

22. Labour Relations

F. W. MURRAY

This 25-session course is primarily for people in industry who now carry responsibility for decisions in personnel administration, particularly where collective bargaining is a factor.

The topics covered will include the history of the trade union movement and labour legislation, with a more detailed examination of certification procedure and The Labour Relations Act of Ontario. Negotiations, conciliation, administration and arbitrations will be covered, together with a study of some of the more important portions of the collective bargaining agreement.

The sessions are of a work-session nature, wherever practical, in order to develop an understanding of the problems both union and management bring to the Labour Relations situation, together with the environment in which they operate.

TEXT: T.B.A.

23. Legal Aspects of Business

J. HEAL

This 25-session course is intended to furnish students with a general understanding of law and to help them avoid legal pitfalls which commonly arise in business. It is designed to assist persons in financial institutions, but will be of use to business people in general. The course consists of a general introduction to commercial law, its history and administration, contracts and commercial paper, including sales, leases, mandates, loans and bills of exchange. Protection of property rights will be considered through the laws of patents, trade-marks, torts, insurance, and bankruptcy. Other civil and criminal remedies will also be discussed. Certain statutes of special interest and the law relating to corporations (i.e., controls, powers, structure, directors, officers) will be reviewed. Students will be required to analyze and formulate practical solutions for common, commercial, legal problems. Special emphasis will be placed on student participation in lecture discussions and case study seminars.

TEXT: T.B.A.

24. Management Principles and Organizational Behaviour

A. I. HAINEY, K. W. PRESTON

This 25-session course will be divided into three general areas. The first will deal with the theory and principles of the managing process. The various management functions will be reviewed and discussed in a critical manner.

The second area will involve an examination of how recent studies in the field of behavioural science and decision-making can apply to management situations. Macgregor's "x" and "y" theory and Blake's Managerial Grid will be presented and discussed.

Finally, a series of case studies will provide an opportunity for a review of the management principles and organizational behaviour as they apply to entrepreneurial situations.

(For those pursuing the Personnel-Industrial Relations co-ordinated program, this course must be taken in the final year.)

TEXT: None.

25. Manpower Planning and Management Development

S. R. MAXWELL

This 20-session course is intended to be a survey and analysis of the major issues confronting corporate management in this field. Topics will include: (1) international vs national problems and issues, (2) the approach of management to manpower problems, (3) economics of manpower, market concepts and planning, cost-benefit analysis, (4) the public factor in manpower development, the concept of the employment service, industry career planning, the mobility issue, (5) the private factor in manpower development, planning for the company and the individual, (6) manpower problems and the small firm, (7) the large firm, developing the organization structure, (8) the impact of technology and adaptation of the organization to conditions of change, (9) work force planning, wage, incentive, and training issues, (10) management development, incentive and training at the supervisory level, theory and practice on appraisal, promotion, and training for management.

TEXT: A list of readings will be assigned.

26. Manufacturing Management

R. R. SERVICE, N. RUSZ

This 20-session course deals primarily with the functions of manufacturing management, stressing the activities of planning, organization, and control. The component parts of the manufacturing function in an enterprise are examined in detail, so as to develop increased understanding of the overall responsibility of the manufacturing manager. Examples will be drawn to illustrate the techniques used to solve management problems encountered in a manufacturing organization.

Topics to be discussed include:

- Organization of the Manufacturing Enterprise
- Budgets and Manufacturing Economics
- Capital Investment
- Process Design
- Method Study and Work Measurement
- Union Management and Personnel Relations
- Wage and Salary Administration
- Network Planning
- Control of Costs, Quality, Inventory and Production

This course is designed for people in supervisory or management positions seeking to improve their effectiveness.

TEXT: F. Moore—*Manufacturing Management (4th edition)*, Richard Irwin.
SUPPLEMENTARY TEXT: *Production Management*—H. N. Broom, Revised Edition 1967, Richard Irwin.

27. Mergers and Acquisitions

E. BATLER

The purpose of this 10-session course is to analyze the process of merger and acquisition of business enterprises. Since the number of enterprises involved in such amalgamations increases each year, it is becoming important for all senior management to become familiar with the key steps.

The course will cover the following topics:

1. The Merger and Acquisition Trend.

2. Company Planning for the Merger—i.e. How To Get Ready.
3. The Search—i.e. How to Find or Be Found.
4. Evaluation and Appraisal—i.e. How Much?
5. Tax Implications of Mergers and Acquisitions.
6. Integrating the Acquisition into the Surviving Organization.
7. Case Histories.

The lectures will be given by specialists in the various aspects as well as general management people who have been involved in actual mergers. The objective of the course is to give senior general, finance, and owner personnel a practical overview of the actual factors to be considered if they are involved in an amalgamation either in the selling or buying organization. Case histories will be used throughout to demonstrate practical solutions. Detailed checklists and an extensive bibliography will be furnished to each student.

The class will be limited to 30 students.

Recommended Reading: (1) W. A. Alberts and J. E. Segall, *The Corporate Merger*, University of Chicago Press. (2) G. McCarthy, *Acquisitions and Mergers*, The Ronald Press, New York 1963.

28. Motivation in Industry

J. GRANT

Managers and superivsors are becoming more aware of the importance of employee motivation as a variable which contributes to organizational effectiveness. This 10-session course, which is intended for middle management, is developed to give an overview of this area.

The course discusses the relationship between motivation and productivity, and deals with the different factors that are related to morale and employee satisfaction.

Factors discussed include: employee personality; style of leadership and supervision; the organization structure; the policies of the organization; job design; and group impact, etc.

This course will be limited to 50 persons.

TEXT: S. W. Gellerman—*Motivation and Productivity*, American Management Association, New York, 1963.

29. Office Management—Introductory

J. DUFFIN

This 10-session introductory course will appeal to men and women who are attracted to office management as a career. Also general supervisors and newly appointed office managers who have limited formal training may find useful the background information available in the course.

The content covered during the ten evenings will be of a basic nature. There will be ample time for the discussion of problems.

Among the topics to be discussed are the following:

- The Office Manager's Function and Responsibilities
- Office Organization
- Personnel Selection and Training
- Communications and Records
- Standardization in the Office
- Scope of the Office

The class will be limited to 50 students.

TEXT: G. R. Terry, *Office Management & Control*, Richard Irwin.

30. Organizational Psychology K. A. CASSAC

Behavioural scientists have developed a body of knowledge in the area of human behaviour that can be applied usefully to the management of organizations whether industrial, business, government, voluntary or hospitals.

This 25-session course is intended primarily for employees in the personnel field; interested middle management also may enrol. The course deals with the experiences, researches and theories of experimental psychology, social psychology, clinical psychology, sociology and organizational science that bear on problems of organizational life. Areas dealt with include the history of organizational psychology; development of modern management concepts; behaviour of individuals in terms of motivation, personality development, perception, attitude formation and learning theory; interpersonal relations, influence processes, communication, leadership styles; group behaviour; role behaviour; decision-making and problem solving; systems model of organizational behaviour; stress, defense mechanisms, maladjustment and maturity; psychological testing.

Discussion of areas of application will include selection, training, performance appraisal, counselling and personnel research.

TEXT: Harold J. Leavitt—*Managerial Psychology*, University of Chicago Press, Chicago, 1964. (Available in paperback)

31. An Overview of Personnel Administration L. WEVRICK

This 25-session course should prove useful to individuals who have just entered or are interested in entering the personnel field. Also, for individuals in supervisory positions, the course will provide an appreciation of the personnel department's role in a business organization.

As an introduction to the field of Personnel Administration, the course covers the major personnel activities by means of lectures, class discussions and analysis of case studies. Pertinent findings from the social sciences and human relations studies will be covered.

Topics to be covered include:

- The relationship of the personnel function to the rest of the organization;
- The personnel administrator's job in manning the operation—recruitment, selection and placement;
- Evaluating jobs and personnel—wage and salary administration, performance appraisal;
- Training and developing people;
- Communications—interviewing and counselling;
- Current labour relations problems and trends;
- Implications of technological change—manpower planning.

The class will be limited to 50 students.

TEXT: E. H. Schein—*Organizational Psychology*, Prentice-Hall, 1965.

32. Person–Person Relations in Organizations F. C. TOOMBS

What does it mean to communicate, to converse? Perhaps the 20 evenings to be spent together cannot be called a course. Human organizations bring persons together to "do" things: whether to maintain a society or community; to fabricate steel, automobiles, bridges, towers; to administer public services and personal services; to plan and evaluate activities; to teach courses and perhaps to learn. To "do" things human beings frequently must converse—what generally we think of as communicate. The hours allotted to this meeting will be spent in exploring the sometimes strange nature of conversation through discussion, to determine "What is common to all?"

Enrollment will be limited to 25.

TEXT: none.

33. The Personnel Function

T. L. BOURK

This is a 25-session survey course on the work of the personnel department. It is designed to illustrate the needs of personnel administration by examining its principles, policies and procedures in the light of past and recent developments.

Topics will include:

- The organization and staffing of the personnel department, the personnel administrator's job, staff-line relationships.
- Employment, job requirements, selection and testing, on-the-job training.
- Development, technical training, performance evaluation, motivation.
- Wage and salary administration, minimum wage legislation, job evaluation, incentives and productivity.
- Security, Unemployment Insurance legislation, retirement plans, benefits and services, provincial and federal welfare legislation.

TEXT: T.B.A.

34. Personnel—Training

J. L. SUKLOFF

This 20-session course is specifically designed for those who wish to know and make use of the latest knowledge and techniques in training employees and in developing supervisors and managers to meet today's business and industrial needs.

Emphasis is placed on the preparation of training programmes and their practical use in solving the day-to-day and long-range operating problems of an organization. Practice in discussion leading and teaching assignments will be included.

The course provides an opportunity for people carrying personnel responsibilities, or in line management position, to study programmes in effect in other companies and to learn more about:

1. Organization Planning
2. Determining Training Needs
3. How People Learn
4. Teaching Techniques
5. The Art of Questioning
6. On the Job Training
7. Supervisory Training
8. Management Development.

TEXT: none.

35. Theories of Organizational Behaviour

N. RUSZ

This 10-session course deals with formal organizations as sociological units. Human behaviour in organizations will be dealt with using propositions about organizations, generally based on the psychological postulate of stimulation, motivation and reaction.

On the basis of their assumptions, propositions will assume that organization members are: passive instruments; motivated by their attitudes, values and goals; or, rational decision makers or problem solvers.

Utilizing a systems approach, models will be used as an aid to abstract theorizing, depicting the "y" is a function of "x" type propositional variables. Class discussion will focus on the validity of the propositions, as experienced in organizations.

Topics to be discussed include:

- Organizational behaviour;
- Classical organization theory;
- Influence processes;
- Motivation to produce;
- Motivation to participate;
- Conflict in organizations;
- Cognitive limits of rational behaviour.

The course is intended for industrial, professional, governmental or institutional middle or senior management personnel, with an interest in, or responsibility for, improving organizational effectiveness.

The course will be limited to 35 students.

TEXT: James G. March and Herbert A. Simon—*Organizations.*

MARKETING COURSES

36. Advertising and Sales Promotion — G. V. FORSTER

This 10-session course studies the objectives and methods of advertising and promotion together with their place in marketing strategy. Topics are presented from the viewpoint of the potential manager of the advertising and promotion function and include: the development of advertising strategy and sales promotion strategy, audience identification, message and media selection, advertising evaluation, budgeting, and measurement of results. Case study will also be included.
Prerequisite:: Course "Marketing Management," or equivalent experience.
TEXT: none.

37. Industrial Marketing — D. GALLAGHER

This 10-session course is given for those who are interested in the application of modern marketing techniques to the marketing of industrial products and services. Included are the following topics of study: characteristics of industrial markets, pricing, middlemen and methods of distribution, selling and promotion, product development and diversification, marketing organization, market planning and control.
Prerequisite: Course "Marketing Management," or equivalent experience.
TEXT: Alexander, Cross, & Cunningham—*Industrial Marketing*; Richard Irwin.

38. International Marketing — D. SIMON

The economic, cultural and political considerations involved in adapting fundamental domestic marketing techniques to foreign conditions will be studied in the 20-session course. Emphasis is placed on market influences related to Canada, the United States and the European Economic Community. This is an introductory marketing management course and will cover basic ideas.
TEXT: T.B.A.

39. Marketing Management — G. H. LENNARD, J. F. LOWERY

Marketing Management is a 20-session survey course which considers the important marketing functions such as distribution, pricing, advertising, marketing research, packaging, sales management, brand policy, product development, merchandising and financing the marketing plan.

Discussion of actual cases on Canadian marketing situations and periodic guest speakers supplement the lecture series. The course will provide the student with an appreciation of modern marketing principles and practices.
TEXT: Leighton and Thain—*Canadian Problems in Marketing*, McGraw-Hill Company of Canada Limited (Second Edition).

Please indicate on application form whether Scarborough or St. George campus.

39C. Marketing Management—Erindale — R. E. VOSBURGH

This is an introductory 20-session course based on the premise that the solution of marketing problems requires a knowledge of marketing research, buyer behaviour and the role of marketing in corporate strategy. Particular emphasis will be on problems requiring management decisions. Problem areas will include product policies, the analysis and the management of channels of distribution, promotion policies and pricing policies.

Discussions will be in the context of business practice as understood in the light of current marketing theories and concepts. Guest speakers, lectures and the regular assignment of cases and problems will be used during the year.

TEXT: Edward C. Bursk—*Text and Cases in Marketing.* Prentice-Hall.

Please indicate Erindale on application form.

40. Marketing Research — A. GAMBLE

This 10-session course is oriented towards the user or buyer of marketing research and is intended to acquaint him with the variety of areas in which marketing research can be used to good effect. It is not intended for those who are already closely involved in marketing research.

The course will cover techniques used today, the organization of the market research industry, methods of initiating, buying and evaluating research, problems of interaction between the various groups concerned and budgeting. The course will be concerned with products and services used by individual consumers rather than industrial products.

Prerequisite: Course "Marketing Management," or equivalent experience.

Textbooks are not essential, but for those wishing to read, the following are recommended:

(General)	Boyd & Westfall—*Marketing Research—Text & Cases*, Richard Irwin
(Statistical)	Robert Ferber—*Market Research*, McGraw Hill.

41. Sales Management — D. GALLAGHER

Included in this 10-session course are the following topics of study: personal selling as a part of the marketing mix, nature of the selling job, recruiting and selecting salesmen, training and development, sales control, compensation, territory allocation and evaluation, sales organization and co-ordination with related functions.

Prerequisite: Course "Marketing Management," or equivalent experience.

TEXT: B. R. Canfield—*Sales Administration*, Prentice-Hall, 4th ed.

42. The Salesman's Role in the Marketing Function — R. LOFTUS

Ten sessions. With selling conditions changing swiftly, there is a greater need than ever for people well trained to function in the sales side of modern marketing programs. New knowledge in both arts and sciences must be combined to meet the demands of today and the challenge of tomorrow. This course gives an introduction to this new knowledge. It will examine in detail modern sales training, motivation, as well as the interpretation and use of modern data processing techniques, market research, and advertising and sales promotion. The role of the salesman on the marketing team will be fully analysed.

Students interested in this course should have previously taken an introductory course in marketing such as "Marketing Management" or have equivalent experience.

TEXT: none.

(Offered in cooperation with the Young Men's Advertising and Sales Club.)

PROFESSIONAL COURSES

43. About Books for Children

M. BAGSHAW

This 12-session course is designed by the staff of the Children's Services of the Toronto Public Libraries for the teacher, teacher librarian, and anyone concerned and interested in children's reading. This course will survey various categories of children's literature always with reference to specific books, the criteria for choosing them, and their place in the child's life. There will be displays both of books discussed and of others suitable for children from infancy through Grade VIII. Some of the treasures from the Osborne Collection of Early Children's Books will be shown. Two assignments will be given during the course.

Topics to be covered include:

- Books of information in general
- Folk literature
- Epic and myth
- People and events in history
- Historical fiction
- Fantasy in fiction
- Realistic fiction
- The classics in new editions
- Picture books
- Poetry and verse.

44. Adult Learning and Teaching

A. TOUGH

This 25-session course is designed for men and women who are involved in the education or training of adults in business, industry, professional and vocational training programs, educational institutions, religious institutions, government libraries, armed services, and other organizations.

The members of this course will learn about the following topics: setting objectives; the functions of the instructor of adults; instructional methods and techniques; evaluation; some psychological characteristics of adults. Members will frequently be encouraged to relate this knowledge to their own professional responsibilities.

The instructor will attempt to use methods suitable for an adult group, including reading, brief lectures, discussion, mimeographed handouts, and observation.

Those who wish to receive a letter of recognition in the course will submit a variety of brief written assignments, usually requiring thoughtful reaction to the reading and discussion. There will be no tests and no examinations.

The only requirement for admission to this course is a desire to increase one's own competence in helping adults learn.

The class will be limited to 30 students.

TEXT: R. Kidd—*How Adults Learn*, Association Press (New York) or G. R. Welch (Etobicoke).

45. Acoustics: Noise Control and Reduction

V. L. HENDERSON

A 20-session series of lecture, laboratory and tutorial problem periods, designed to provide a theoretical background on which to base the practical

solution of noise problems. It will include in addition to a presentation of the physical characteristics of acoustical sources and acoustical waves, discussions of the transmission, isolation, absorption, perception, interpretation and measurement of sound; acoustical criteria; mechanical vibration, and vibration isolation.
TEXT: none.

46. Calculus for Engineers

B. H. KARNOPP

This 25-session course is to serve as a review of elementary calculus and differential equations for those with little or no knowledge of calculus. Each session will consist of half a lecture on theory and half a lecture on problems. Among the topics to be covered are differentiation, integration, maxima and minima, multiple integrals, Taylor series, elementary first and second order differential equations.
TEXT: F. Ayres, Jr.—*Calculus*, Schaum.
(Offered in co-operation with the Association of Professional Engineers of Ontario.)

47. Computer Programming and Analysis for Engineers

A. C. HEWITT

This 25-session course covers scientific programming language and technique including programme analysis, logic diagramming, coding, debugging and documentation.

Examples of various applications are explored. Each student will be assigned a problem in his own area of interest to be carried through final computer programming.

Other topics touched on will include: history of computers, their internal organization and design, symbolic logic, data processing and latest developments in computer language and application.
TEXT: none.
(Offered in co-operation with the Association of Professional Engineers of Ontario.)

48. Concrete and Soil-Cement Paving

M. M. DAVIS

This 10-session course will cover the design, construction and inspection of both concrete and soil-cement pavements.

Recommendations will be made for subgrade and sub-base construction and also for the design, testing and inspection of concrete mixes for paving.

Latest design criteria for pavement thickness calculations will be presented.

Jointing of concrete pavements will be discussed and also latest developments in the use of continuous reinforcement.

Construction techniques and equipment required to build both urban streets and expressways will be covered.

Maintenance practices will be mentioned, as will the findings of the AASHO Road Test and the economics of pavement design.

This course will be of interest to Professional Engineers or senior registered technicians.
TEXT: Literature, pertinent to the course, will be made available for those who need it, through the instructor.
(Offered in co-operation with the Portland Cement Association.)

49. Dynamics of Aerospace Vehicles

P. C. HUGHES

This 25-session course is intended for those who wish to acquire a better understanding of the dynamic principles behind the aircraft and spacecraft of this modern age. None of the topics below is studied in great detail; rather it is hoped that a general appreciation will be obtained of the current problems in this area.

- Review of principles of dynamics, Newton's Laws, energy momentum.
- Rigid body motion, elastic motions (vibrations)
- Gravitational force field
- Aerodynamic forces
- Subsonic, supersonic and hypersonic aircraft
- Stability and performance
- Reentry vehicles, flight paths and heating
- Satellites, orbits and attitude control
- Interplanetary missions, trajectories, optimization

College-level mathematics is a prerequisite.

TEXTS: B. Etkin—*Dynamics of Flight.* A. Miele—*Flight Mechanics.* A. I. Berman—*Physical Principles of Astronautics.*

50. Elements of Materials Science

G. K. KORBACHER

In the light of engineering requirements of materials, this 25-session course discusses material properties and their changes in relation to atomic structure, bonding and arrangement; considers the effect of structural imperfections and atom movements; explains electrical conductivity, electron energy bands, magnetic and optical behaviour.

Next, it deals with metallic phases, deformation of metals and metal failure (e.g. fatigue); multiphase materials, phase diagrams and reactions within solid materials; changes in microstructure and their effect on material properties.

Last, environmental effects like corrosion, radiation damage, etc., on materials are discussed and a review of the latest state of the art on composite materials is given.

Applicants should have engineering experience.

TEXT: L. H. Van Vlack—*Elements of Materials Science*, Addison Wesley Inc.

51. Heavy Water Reactor Design Principles

D. G. ANDREWS

This 20-session course was primarily designed to meet the need for an overall picture of the heavy water reactor system, and was aimed at engineers and designers working on, or otherwise interested in, some aspect of the nuclear field. The need has now to a great extent been met, and the course will be discontinued after the present session. Prospective students who wish to avail themselves of this opportunity to gain an understanding of the heavy water reactor should therefore register at this time.

Lecturers have been chosen from among leading workers in the field.

Topics covered will include: reactor fundamentals; costs; thermodynamics; physical, chemical, and metallurgical problems; steam boilers and turbines; design of the core; shielding; fuel systems; control and instrumentation; hazards; and other pertinent topics.

TEXT: none.

(Offered in co-operation with the Canadian Nuclear Association.)

52. High Speed Data Processing — A. ADAMS

This 20-session introduction to modern high-speed data processing systems provides a general background on the uses of stored programme computers in business problems. It is divided into three approximately equal sections:

Data processing systems
Coding and programming
Applications

The section on systems is a study of the components and principles of computers. The section on coding and programming introduces terminology and new ideas through a few simple problems. The last section is about the application of these new methods to insurance, inventory control, accounting, production scheduling, etc. Throughout the course a special effort is made to concentrate on methods which are generally valid on modern machines. The course terminates with a symposium, in which representatives of manufacturing and other organizations active in this field in Canada are invited to participate.

Applicants need not have specialized knowledge of mathematics nor any knowledge of electronics. They should, however, have some interest and experience in a field where the handling of numerical data is important, such as accounting, banking, business management, investment financing or insurance.

This class is limited to 100 students.

TEXT: T.B.A.

53. Illumination I* — M. G. CURRIE, G. E. DAVIDSON

This 12-session course is designed to provide a sound, fundamental background in illumination for those in public lighting services, consulting engineering, lighting manufacturing and sales, architecture, etc. Applicants should be engineering or architectural graduates, technological institute graduates (e.g. Ryerson) or have equivalent educational background and experience. A brief résumé of the applicant's qualifications will be required with the application forms.

The topics covered will include: the eye and vision; radiation and light production; photometric theory; light sources; light control and lighting materials; photometry or daylight.

The course will consist of lectures, and laboratory and problem sessions. Discussion and active student participation will be encouraged.

TEXT: none.

54. Illumination II* — M. G. CURRIE

This 12-session course is complementary to Illumination I and the applicants should have satisfactorily completed that course or be able to demonstrate competence in its subject matter.

This course will relate the fundamental principles discussed in Illumination I to the design of the visual environment—both interior and exterior. Consideration of the interrelation of lighting with other environmental factors (heating, air conditioning, acoustics, etc.) will be included.

The course will consist of lectures, problem sessions, etc. Discussion will be encouraged.

TEXT: none.

*Offered in co-operation with the Illuminating Engineering Society, Toronto Section.

55. Introduction to Operations Research

J. CRAN

This is an elementary 20-session course for those who wish to learn about operations research by working with some of its techniques. The techniques include those most frequently applied to problems in business and industry. They will be presented by specialists who have practical experience in their use.

Operations Research proceeds by setting up mathematical models of physical systems. Manipulation of the model yields insight as to how the physical system would behave if operated under various circumstances thus permitting operations to be improved or "optimized."

The first part of the course will deal with deterministic models, the most important of which is linear programming. The latter part will deal with probabilistic models and their application to queueing, inventory theory and production control.

The emphasis throughout will be on concepts, methods and applications and not on rigorous mathematical derivations of the theory. The course is thus not designed to provide a firm theoretical basis for future O.R. practitioners. A background of first-year university mathematics will be desirable though not essential.

TEXT: T.B.A.

56. An Introduction to Solid State Physics

R. J. BALCOMBE

Those entering this 25-session course will be assumed to have had an introductory course in physics at the first year university level.

Selected topics to be discussed will include crystal structure and analysis, band theory, electrical and thermal conduction and thermoelectricity in metals, principles of semi-conductor devices, magnetic properties of materials, superconductivity, etc. The necessary concepts in quantum theory and statistical mechanics will be developed as they are required.

TEXT: Hutchison & Baird—*The Physics of Engineering Solids,* Wiley.

57. Introduction to Stochastic Processes and their Applications in Business and Engineering

I. MCNEIL

Prerequisites: The course on Probability Theory and Mathematical Statistics listed in this brochure, or an equivalent course. Mathematical maturity, at the level expected of an engineering graduate. Some acquaintance with operations research procedures would be desirable.

This 25-session course is designed for engineers, operational researchers and management scientists who wish to acquire a working knowledge of the types of probabilistic models which are currently being applied to problems of business and engineering.

The course will contain a brief review of probability theory, classification of probabilistic models, and a discussion of Markov Processes in discrete and continuous time and space. An introduction to non-Markov processes will be given. Some consideration will be given to statistical inference and computer simulation in stochastic models. Random walk and queueing models will be discussed.

Applications include problems of machine replacement, reliability, inventory management, storage and maintenance.

The course will be limited to 35 students.

TEXT: Emmanuel Parzen—*Stochastic Processes*, Holden-Day, Inc. San Francisco, 1962.

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

58. Laplace Transformation for Engineers F. P. J. RIMROTT

An introductory 25-session course, designed to acquaint engineers with the use of the Laplace Transformation in engineering practice, it will begin with a discussion of differential equations in engineering and their solution. A thorough discussion of the Laplace transform, including transforms of functions, transforms of operations, the inverse transform, partial fractions, Heaviside expansion and the inversion integral will follow. Linear first-order and second-order differential equations and integrodifferential equations will be solved. Laplace transform theorems, involving complex translation, real translation, real and complex differentiation and integration, periodic functions, scale changes, convolution, initial and final value theorems will be studied. Methods will be investigated allowing the interpretation of physical system behaviour in the Laplace domain, including the root-locus method, the Routh-Hurwitz stability criterion, block diagrams and feedback systems. The use of determinants and determinant theorems, complex variable theory and the theory of residues, Fourier series and Fourier integrals and methods for finding roots of equations will also be investigated. Mechanical, electrical and electro mechanical systems will be used throughout the course to illustrate the application of the Laplace transform.

Applicants should have an engineering degree or equivalent training.

TEXT: C. J. Savant—*Fundamentals of the Laplace Transformation*, McGraw-Hill.

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

59. Limit Design of Reinforced Concrete Structures

S. M. UZUMERI

This is a 20-session program in general principles of limit design of concrete structures. It will cover collapse mechanisms, moment-rotation characteristics of sections and frame members, plastic hinges, optimum design of continuous beams and yield line analysis of two way and flat slabs.

TEXT: T.B.A.

60. Linear Algebra and Matrices R. W. P. ANDERSON

Those entering this 25-session course will be assumed to have undergraduate engineering mathematics or its equivalent. It is not intended that the classic calculus or differential equations will be covered. The course consists of: elementary linear algebra including systems of linear equations, matrix, notations, and operations, inversion, vectors and transformations, leading into application in linear programming and eigen value problems.

The class will be limited to 50 students.

TEXT: T.B.A.

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

61. Linear Programming and its Extensions J. W. ABRAMS

This 25-session course is designed for engineers, operational researchers, and management scientists who wish to be able to apply professionally linear programming and related techniques. Although no previous experience with mathematical programming is required, it will be helpful, as will be a familiarity with matrices and linear algebra.

The course will start from fundamentals and develop and consider such topics as the simplex method, the revised-simplex, the dual-simplex, activity analysis, price relationships, simple and generalized transportation problems, allocation problems, capacitated transportation problems, and flows through networks.

Parametric programming problems and elementary cases of stochastic and integer programming will be treated. An introduction to non-linear and dynamic programming will be included.

Although emphasis will be placed upon methods of setting up and solving problems, these problems will be related to specific applications and case studies in the literature.

The course will be limited to 35 students.

TEXT: G. B. Dantzig—*Linear Programming and Its Extensions*, Princeton University Press, 1965 (2nd Printing).

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

62. Matrix Methods in Engineering B. TABARROK

This 25-session course is intended for practising engineers and emphasizes the usefulness of matrix methods in the static and dynamic analysis of engineering systems, on the digital computer.

Beginning with a brief review of determinants, the fundamentals of matrix algebra and calculus are discussed with emphasis on those properties which are important in the engineering application of matrices. The theory developed is then applied to vibration problems, analysis of linear structures, theory of elasticity and the solution of simultaneous linear differential equations. In the static and dynamic analysis of engineering systems both the equilibrium and compatibility methods are discussed.

TEXT: Louis A. Pipes—*Matrix Methods for Engineering*, Prentice Hall, 1963.

63. Evaluation of Planning in Metropolitan Toronto A. J. DAKIN

The purpose of this 10-session course is to take a systematic look at the way in which the planning of the Metropolitan Area of Toronto has developed from its beginning at the end of the 18th century to today, and to attempt to evaluate the contemporary planning of the area.

The course will assess the early metropolitan planning attempts and show how they led to the present planning approaches, including the ways in which the earlier thinking in transportation, government and finance is influencing the present capacity to plan.

The engineering, political and planning aspects of transportation will be reviewed with particular reference to the subway. The development of physical services, governmental techniques and a comparative study of the planning of Metropolitan Toronto and the constituent municipalities will be included.

Seminars will be conducted by a group of experts in urban history, politics, transportation, finance and planning. The course will consist generally of about one hour of lecture and the rest discussion.

The program will be designed to be suitable both for those professionally concerned and interested laymen.

Recommended Reading:

City of Toronto—*Towards a Plan for Toronto 1966.*
Metro Toronto—*Official Plan* (Revised 1967).
Rodwin, L.—*The Future Metropolis,* Brazillor, 1961.
Goodman, P. & P.—*Communitas,* Random, 1960.
Editors of Fortune—*The Exploding Metropolis,* Doubleday, 1958.

64. Organic Chemistry—Structure and Synthesis

S. MCLEAN

This 10-session course is concerned with problems related to the determination of structure and the synthesis of organic compounds. Emphasis will be placed on recent developments and examples will be chosen to illustrate the application of spectroscopic methods to structure determination and of mechanistic studies to rational synthesis.

The course is designed to help those who apply organic chemistry in their professions to keep acquainted with modern concepts and developments. A sound general knowledge of organic chemistry and an acquaintance with the basic aspects of the principal spectroscopic methods will be assumed. The Organic Chemistry course given in the Extension Division in 1965–66 and 1966–67 or a course equivalent to it would serve as an adequate introduction to the present course.

No textbook will be assigned, but references to books and journals will be given. The course will not include any laboratory work.

(Offered in co-operation with the Chemical Institute of Canada.)

65. The Physics, Properties and Applications of Lasers

R. M. MEASURES

Twenty-five sessions. The spectrum of applications for lasers is ever increasing and at present encompasses fields that are as diverse as surveying for natural resources, meteorology, flight safety, holography, welding and tunneling, data storage and medicine. This course is intended for engineers and scientists in industry who may have some application in mind and wish to understand the principles and properties of lasers or for those who are interested in determining if a laser could be of use to them.

The first part of the course will be devoted to a study of the physics of radiation, its interaction with matter and the general principles and properties of lasers. The second part of the course will concentrate on the types of lasers available, including their special features and applications.

The course will have reasonable depth but the mathematics will be kept to a minimum, where possible, and the engineering aspects emphasized.

TEXTS: B. A. Lengyel—*Lasers,* J. Wiley & Sons, 1962. S. Leinwoll—*Understanding Lasers & Masers,* J. F. Rider, 1965. W. V. Smith & P. P. Sorokin—*The Laser,* McGraw Hill, 1966.

66. Probability Theory and Mathematical Statistics

D. J. CLOUGH

This 25-session course offers a systematic introduction to modern probability theory and mathematical statistics, and is intended for engineers and practitioners in operations research. It is designed to form a rigorous background for those who desire to employ probability and statistics as a working tool and who may desire a thorough course as a preliminary to undertaking advanced work in industrial engineering, operations research, or management science. Subjects to be covered include sample spaces, random variables, probability distributions, characteristic functions, sampling, theory of estimation, and elements of analysis of variance. Familiarity with algebra and the calculus is required.

TEXT: John Freund—*Mathematical Statistics*, Prentice-Hall, Inc.

AUX TEXT: Alvin W. Drake—*Fundamentals of Applied Probability*, McGraw Hill, 1957.

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

67. Rocket Engineering

I. G. CURRIE

Those entering this 25-session course will be assumed to have an engineering degree, or equivalent training in fluid mechanics, heat transfer and mathematics.

Starting with the mechanics of propulsive systems, the thrust equation will be developed and applied to rockets in gravity-free space and in a gravitational field. Optimum burning times and optimization of multistaging will be covered as well as space orbits and trajectories.

Prior to analyzing the rocket motor itself, a brief review of fluid mechanics and heat transfer will be given. These results will then be applied to flows in rocket nozzles. The effects of over-expansion and under-expansion will be investigated as well as propellant properties and two-phase flows.

Solid propellant rockets will be treated, including burning rates, non-equilibrium combustion, heat conduction in the core, and high-frequency combustion instability. The treatment of liquid propellant rockets will include fuel pressurization systems, regenerative cooling, and low-frequency combustion instability. The course will conclude with a study of some nuclear propulsion systems including the solid-core nuclear rocket and the ion rocket.

Recommended reference:

P. G. Hill and C. R. Peterson—*Mechanics and Thermodynamics of Propulsion*, Addison-Wesley (1965).

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

68. Simulation and Management Engineering Modeling

D. J. CLOUGH

The 20-session course presented is a basic, introductory treatment of simulation for the non-expert in either simulation or electronic computer usage. Students are expected to have a working knowledge of algebra. A knowledge of calculus and elementary probability is desirable.

Simulation of system behaviour generally requires many calculations, and it is often considered that only electronic computers can carry out this process efficiently. Therefore some time must be spent on basic ideas which arise in computer programming. The language dealt with most fully is GPSS, but features of some others will be discussed.

Treatment of the course material is directed more to discussion than to lectures. The building blocks of simulation studies which are developed include problem definition, data collection, choice of model, model

construction, probabilistic variables, random number generation, choice of output, model verification, and experimentation.
TEXT: McMillan & Gonzales—*Systems Analysis*, Irwin.
(Offered in co-operation with the Association of Professional Engineers of Ontario.)

69. Statistical Decision Theory and Linear Programming

This 20-session course is designed for engineers, operational researchers, management scientists and those who wish to apply mathematical techniques to decision making. Familiarity with the methods of probability and statistics, such as is acquired through an introductory course, is an essential prerequisite as is calculus. Familiarity with linear algebra and linear programming will be helpful.

After a review of the elements of probability and statistics (events conditional probabilities, characteristics of random variables, important distributions, and sufficient statistics) the course will treat a number of statistical decision problems. In particular, principles used in decision making, states of nature, various decision rules and their comparison, Bayesian Decision rules and their computation, and geometrical interpretations will be covered.

Minimax Decision rules will be related to linear programming which will be applied in their computation. Approximate minimax decision rules will be treated. Sequential sampling problems will be discussed along with the minimax Wald decision rule and approximations. Methods of handling regular decisions over time will be covered. Decision theory models will be applied to estimation and the testing of hypotheses.
Recommended references:

1. L. Weiss—*Statistical Decision Theory*, McGraw Hill, 1961.
2. S. Gass—*Linear Programming*, McGraw Hill, 1964 (Second Edition).
3. W. Karush—*Lectures on Decision Theory*, Systems Development Corporation, N Sp—1221 Santa Monica, California, 1963.

70. Statistical Methods

V. SAWYER

This is an introductory 20-lecture course in modern statistical methods and in ways of making decisions under conditions of uncertainty. Topics include frequency series, correlation, time series analysis, elementary probability, sampling, statistical inference, and analysis of variance. No mathematics beyond high school algebra is required. The class will be limited to 30 students.
TEXT: John E. Freund and Frank J. Williams—*Elementary Business Statistics: The Modern Approach*. Prentice-Hall, Inc., 1964.

71. Structural Stability with Applications to Steel Frameworks

I. MEDLAND

This 25-session course is designed to provide the structural engineer with a basic knowledge of the phenomenon of instability, with an ability to take account of axial load effects in the design of plane frameworks and with a knowledge of the background to, and limitations of the current design specifications (C.S.A. S16—1965) as they relate to stability effects.

The phenomenon and methods of approach will be discussed through applications to mechanisms and then the techniques extended to elastic members. The column will be discussed to introduce crookedness, lateral load and yield effects and stability functions. Plane frames of the truss and rigid frame types (with and without sidesway) will then be discussed under axial load alone. The effects of primary bending moment will then be considered toegther with design considerations at working loads for multi-storey, rigid frame applications.

Applicants should have an engineering degree or equivalent and a reasonable familiarity with undergraduate basic matrix manipulation would be helpful.

TEXT: M. R. Horne and W. Merchant—*The Stability of Frames*, Pergamon Press.

(Offered in co-operation with the Canadian Institute of Steel Construction.)

72. Systems Engineering

F. P. J. RIMROTT

This 25-session course is intended for engineers and will begin with an introduction into systems engineering, differential equations, dynamic analogies and electrical analogies of non-electrical systems. A thorough discussion of block diagram analysis will follow, which covers the determination of over-all transfer functions, block diagrams, operational notation, and the reduction of block diagrams. Subsequently control systems including their definition, elements, stability and relative stability will be studied as well as the root-locus method. Rules for the linearization of nonlinear systems will be given. Fourier series, flow pulsations and describing functions will be studied, followed by a discussion of energy conversion, transient response and maximum power, power response, D-C machines, gas turbines. The course will conclude with an analysis of distributed systems and the derivation of transmission line equations.

Participants should be familiar with the Laplace transform, or should take the course "Laplace Transformation for Engineers" concurrently.

TEXT: J. E. Alexander and J. M. Bailey—*Systems Engineering Mathematics*, Prentice-Hall Ltd.

(Offered in co-operation with the Association of Professional Engineers of Ontario.)

73. Theory of Elasticity

R. C. TENNYSON

This 25-session course is designed primarily for engineers and designers working in all fields of structural analysis. In recent years the theory of elasticity has found considerable application in the solution of engineering problems in which the elementary methods of strength of materials were found inadequate to furnish satisfactory information concerning stress distributions. In many cases, recourse must be made to the more powerful methods of the theory of elasticity for the solution of structural problems.

It is the purpose of this course to establish the fundamental equations and assumptions underlying the field of elasticity, emphasizing physical principles involved with a view to providing in simple form the necessary basic knowledge of the theory of elasticity. The mathematical derivations will be put in elementary form and usually will not require mathematical knowledge beyond the engineering degree level.

The topics covered will include an analysis of stress and strain in both two and three dimensions, the linear elastic model, general theorems of elasticity and the application of the theory to practical problems of elasticity in both two and three dimensions. In addition, the theory of photoelasticity and its application to experimental methods will be discussed.

TEXT: S. Timoshenko and J. N. Goodier—*Theory of Elasticity*, 2nd edition, McGraw-Hill, 1951.

74. Transportation System Planning

R. G. RICE, R. M. SOBERMAN

This 25-session course is concerned with the techniques of urban transportation planning and is divided into four parts. Part one deals with trip generation and the relationship between trip production and land-use. It includes a brief treatment of data collection and analysis. Part two consists of a review of some of the analytical land-use models used to simulate urban development. Part three deals with trip distribution and traffic assignment and also treats the problem of calibrating travel forecasting models. Part four is concerned with the techniques used in evaluating alternative transportation plans and also deals with possibilities for incorporating land-use and traffic prediction models into a single planning process.

Reference Reading:

Oi and Shuldiner—*An Analysis of Urban Travel Demands.*
Mitchell and Rapkin—*Urban Traffic: A Function of Land-Use.*
Martin, Memmott and Bone—*Principles and Techniques of Predicting Demand for Urban Area Transportation.*
Buchanan—*Traffic in Towns.*
Meyer, Kain and Wohl—*The Urban Transportation Problem.*

75. Ultimate Behaviour of Reinforced Concrete Members

S. M. UZUMERI

This 20-session course offers a fundamental study of the ultimate strength and behaviour of the reinforced concrete members subjected to axial and transverse loads. The early part of the course will be devoted to the development of the fundamental relationships and the study of the behaviour of the members starting from the stress-strain diagrams of the concrete and steel, and compatibility of strain.

Relations between results of research and current design specifications (NBC—1965) will be examined.

Creep and shrinkage and their effect on reinforced concrete members will be discussed. An introduction to the behaviour of reinforced concrete structures will be made. A number of numerical examples will be worked out in the class to illustrate the application of the fundamental concepts and to introduce some of the new design aids.

TEXTS: Ferguson—*Reinforced Concrete Fundamentals*, J. Wiley & Sons. Winter, Urquhart, O'Rourke, Nilson—*Design of Reinforced Concrete Structures*, McGraw-Hill (7th Edition).

(Offered in co-operation with the Portland Cement Association.)

76. Vibration Analysis

D. L. ALLEN

This 25-session course is intended to acquaint the practicing Engineer with vibration theory and applications. The material studied will be of interest to any Engineer who is concerned with such topics as vibration isolation, the various means of controlling or eliminating an unwanted vibration, dynamic behaviour of systems and analysis for resonant conditions. Emphasis will be placed on practical methods of analysis and the design of associated hardware necessary for vibration control.

The material treated will be: vibrating systems with one degree of freedom; systems with two degrees of freedom; multi-degree of freedom systems; methods of determining natural frequencies; the Lagrange Equations; transient vibration and shock; approach to collecting and analyzing data from a vibrating system.

TEXT: W. T. Thomson—*Vibration Theory & Applications*, Prentice Hall, 1965.

77. Writing Style in Professional Practice

P. B. HUGHES

A 12-session series for men and women in professional practice or engaged in the associated technologies, and for those holding technical staff positions in commerce and industry, to whom style in their functional writing is of significance. The utility of style as it exists in such writing is examined, and a systematic approach to its design and control is presented.

Illustrative case studies and exercises are included with printed notes covering the text of the lectures. No limit is imposed on the number of participants, but only a random sample of exercises rendered will be read and discussed.

TEXT: Mimeographed text provided.

78. Numerical Control in Industry

A completely new course is being planned on Numerical Control which is the employment of digital computer programs for computation of machining points. Automatic programming of machine tools has led to the use of symbolic control of not only machine tools, but also automated drawing machines to produce line drawings from tape prepared from a digital computer. Further information will be available by calling 928–2400 after November 1, 1967.

The University of Toronto issues the following calendars and other publications concerning courses of instruction given by the University, any one of which may be had on application to the Office of Admissions of the University, or to the Secretary of the Faculty, School or Institute about which information is sought.

GENERAL INFORMATION–	University of Toronto Handbook
ADMISSION INFORMATION–	Admission Awards
	Admission Circular
APPLIED SCIENCE AND ENGINEERING–	Faculty of Applied Science and Engineering
	Engineering at Toronto—descriptive brochure
	Diploma Course in Operations Research
ARCHITECTURE–	School of Architecture
	Landscape Architecture—descriptive brochure
	Graduate Work in Architecture—descriptive brochure
ARTS AND SCIENCE–	Faculty of Arts and Science
	Courses and Subjects in Arts and Science
	Diploma Course in Computing and Data Processing
BUSINESS–	School of Business—Graduate Programme in Business Administration
CHILD STUDY–	Institute of Child Study
DENTISTRY–	Faculty of Dentistry
	Courses for Graduates in Dentistry
	Dental Hygiene
EDUCATION–	The College of Education
	Graduate Degrees in Education*
EXTENSION–	Degree Courses in Extension
	Certificate Course in Business
	Certificate Course in Public Administration
	Certificate Course in Criminology
	Evening & Afternoon Courses in the Liberal Arts
	Business and Professional Courses
	Correspondence Courses
	Pre-School Education
FOOD SCIENCES–	Faculty of Food Sciences
FORESTRY–	Faculty of Forestry
GRADUATE STUDIES–	School of Graduate Studies
HYGIENE–	School of Hygiene
LAW–	Faculty of Law
LIBRARY SCIENCE–	School of Library Science
MEDICINE–	Faculty of Medicine
	Division of Rehabilitation Medicine
	Division of Postgraduate Medical Education
MUSIC–	Faculty of Music
	The Royal Conservatory of Music
	School of Music Year Book
	General Syllabus
	Pianoforte and Theory Syllabus
NURSING–	School of Nursing
PHARMACY–	Faculty of Pharmacy
PHYSICAL AND HEALTH EDUCATION–	School of Physical and Health Education
SOCIAL WORK–	School of Social Work

*Write to: Ontario Institute for Studies in Education, 102 Bloor Street West, Toronto 5, Ontario.

UNIVERSITY OF TORONTO

DIVISION OF EXTENSION
84 QUEEN'S PARK
TORONTO 5

Application for Enrolment

Business and Professional Courses

OFFICE USE ONLY

Receipt No. ....

C.A. ....

Course(s)

NAME MR.
MRS.
MISS________________________________

(*please print and underline surname*)

ADDRESS____________________________________
NUMBER AND STREET CITY POSTAL ZONE

TELEPHONE: HOME________________ BUSINESS________________

COMPANY NAME________________________________

COMPANY ADDRESS________________________________

____

PRESENT POSITION ________________________________

FEE $ __________ CASH ☐ PERSONAL CHEQUE ☐ COMPANY CHEQUE ☐

(Cheques should be made payable to UNIVERSITY OF TORONTO at par Toronto)

Refunds can only be made if requested prior to the second lecture.

DATE ________________ SIGNATURE ________________________

Any Course may be cancelled if there is insufficient enrolment. Fee is refunded in case of cancellation of course or applicant may apply fee to another course if application is made for transfer. (Please see General Information for details.)

PLEASE PRINT